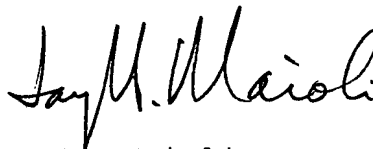## REMARKS

Claims 1-32 remain in the application with claims 1, 5, 10-12, 15-18, 22-24, 27, and 32 having been amended hereby.

As will be noted from the Declaration, Applicants are citizens and residents of Japan and this application originated there.

Accordingly, the amendments made to the specification are provided to place the application in idiomatic English, and the claims are amended to place them in better condition for examination.

An early and favorable examination on the merits is earnestly solicited.

Respectfully submitted,
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VERSION WITH MARKINGS TO SHOW CHANGES MADE
IN THE ABSTRACT OF THE DISCLOSURE

Please amend the Abstract by rewriting same to read as follows.

An [object is] <u>audio signal processing device</u> to enable accurate calculation of angles and displacements[,] and to enable reduction of circuit scales[. An audio signal processing device, having] <u>includes</u> a digital signal processing circuit (31) [which] <u>that</u> performs virtual acoustic image localization processing such that an acoustic image is localized at an arbitrary position in the vicinity of the listener[,] by reproducing, using headphones (2) or a plurality of speakers, output signals obtained by signal processing [of] input audio signals, <u>and</u> is characterized in that analog detection signals from a sensor (1) [which] <u>that</u> detects the state of action of the listener are input to the digital signal processing circuit (31) via an A/D converter (30), and the transmission characteristics of these audio signals are modified in realtime, according to values derived by processing the values of analog detection signals from the sensor (1)[,] or by processing the analog detection signals.

IN THE CLAIMS

Please amend claims 1, 5, 10-12, 15-18, 22-24, 27, and 32 by rewriting same to read as follows.

--1. (Amended) An audio signal processing device[, which performs] for performing virtual acoustic image localization processing such that an acoustic image is localized at an arbitrary position in [the] a vicinity of [the] a listener, by reproducing[,] by [means] one of headphones [or] and a plurality of speakers, output signals resulting from signal processing of input audio signals[;], the device comprising:

digital signal processing means [which performs] for performing virtual acoustic image localization processing of said input audio signals;

a sensor for detecting a state of motion of the listener;

an A/D converter [which converts] for converting into digital signals the analog detection signals from [a] said sensor [which detects the state of motion of said listener]; and[,]

control means [which performs] for performing control so as to change and output in realtime [the] transmission characteristics of said digital signal processing means, according to output signals from said A/D converter[;], wherein

at least part of said A/D converter is [comprised within] formed as part of said digital signal processing means.

--5. (Amended) The audio signal processing device according to Claim 1, wherein one of output signals of said A/D converter[, or] and control signals from said control means[, can be] are output to external equipment.

--10. (Amended) The audio signal processing device according to Claim 6, wherein said sensor is an angular velocity sensor, and

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angle data is calculated from A/D-converted angular velocity data, and the calculated digital angle data [can be] <u>are</u> output to the external equipment.

--11. (Amended) The audio signal processing device according to Claim 6, wherein said sensor is <u>one of</u> a velocity sensor [or] <u>and</u> an acceleration sensor, <u>and wherein</u> displacement data is calculated from A/D-converted velocity or acceleration data[,] and calculated digital displacement data [can be] <u>are</u> output to the external equipment.

--12. (Amended) The audio signal processing device according to Claim 1, [wherein] <u>further comprising</u> a plurality of [said] A/D converters [are provided,] <u>and a plurality of sensors</u> and processing of detection signals <u>fed to said plurality of A/D convertors</u> from the plurality of sensors detecting the state of motion of said listener is performed by said digital signal processing means.

--15. (Amended) An audio signal processing device[, having digital signal processing means which] <u>that</u> performs virtual acoustic image localization processing such that an acoustic image is localized at an arbitrary position in [the] <u>a</u> vicinity of [the] <u>a</u> listener[,] by reproducing [by means] <u>using one</u> of headphones [or] <u>and</u> a plurality of speakers, output signals resulting from signal processing of input audio signals[;]<u>,</u> wherein said [digital] <u>audio</u> signal processing [means] <u>device</u> comprises<u>:</u>
   a one-bit quantizer [which converts] <u>for converting</u> analog detection signals from a sensor [which] <u>that</u> detects [the] <u>a</u> state of motion of said listener into digital signals, and
   control means [which performs] <u>for performing</u> control so as to

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modify in realtime [the] transmission characteristics of said [digital] <u>audio</u> signal processing [means] <u>device</u>, according to output signals from said one-bit quantizer.

--16. (Amended) The audio signal processing device according to Claim 15, wherein <u>one of</u> output signals from said one-bit quantizer [or] <u>and</u> quantization error signals in said one-bit quantizer [can be] <u>are</u> output to external equipment.

--17. (Amended) The audio signal processing device according to Claim 15, wherein <u>one of</u> output signals from said one-bit quantizer [or] <u>and</u> control signals from said control means [can be] <u>are</u> output to external equipment.

--18. (Amended) The audio signal processing device according to Claim 15, wherein output signals from said one-bit quantizer [can be] <u>are</u> output to external equipment as digital detection signals converted into a [different] <u>predetermined</u> unit system.

--22. (Amended) The audio signal processing device according to Claim 18, wherein said sensor is an angular velocity sensor, and angle data is calculated from A/D-converted angular velocity data, and calculated digital angle data [can be] <u>are</u> output to the external equipment.

--23. (Amended) The audio signal processing device according to Claim 18, wherein said sensor is <u>one of</u> a velocity sensor [or] <u>and</u> an acceleration sensor, displacement data is calculated from <u>one of</u> A/D-converted velocity [or] <u>and</u> acceleration data, and calculated digital displacement data [can be] <u>are</u> output to the external equipment.

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--24. (Amended) The audio signal processing device according to Claim 15, [wherein] <u>further comprising</u> a plurality of said one-bit quantizers [are provided,] <u>and a plurality of sensors</u> and processing of detection signals <u>fed to said plurality of one-bit quantizers</u> from said plurality of sensors which detect the state of motion of said listener is performed by said digital signal processing means.

--27. (Amended) An interface circuit[, which supplies] <u>for supplying</u> analog detection signals from a sensor as digital detection signals, comprising<u>:</u>

an A/D converter [which converts] <u>for converting</u> said analog detection signals into digital signals;

computation means [which converts] <u>for converting</u> said A/D converter output signals into detection data in a prescribed unit system; and[,]

memory [which stores] <u>means for storing</u> detection data computed by said computation means[;]<u>,</u> wherein

detection data stored in said memory [can be] <u>means are</u> read by external equipment, wherein

at least part of said A/D converter, said computation means and said memory <u>means</u> are [comprised within] <u>formed as part of</u> digital signal processing means which performs signal processing of and outputs input audio signals.

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--32. (Amended) A signal processing device, [wherein] <u>comprising:</u>

an audio signal processing device [is provided which, by] <u>for</u> reproducing[,] by [means] <u>one</u> of headphones [or] <u>and</u> a plurality of speakers[,] output signals resulting from signal processing of input audio signals[, performs] <u>and for performing</u> virtual acoustic

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image localization processing such that an acoustic image is localized at an arbitrary position in [the] a vicinity of [the] a listener, and

an image display device [is provided which reproduces] for reproducing images before either one eye or both eyes of said listener;

said audio signal processing device [comprising] including

digital signal processing means [which performs] for performing said virtual acoustic image localization processing of said input audio signals,

an A/D converter [which converts] for converting into digital signals analog detection signals from a sensor which detects [the] a state of motion of said listener, and

control means [which performs] for performing control so as to change in realtime [the] transmission characteristics of said digital signal processing means, according to output signals from said A/D converter[,] and [which performs] for performing control so as to update [the] display content or display position in said image display device; and wherein

at least part of said A/D converter is [comprised within] formed as part of said digital signal processing means.